Training Course on Airport Master Planning and Development

Professional Development Training Course Outline

Category	Aviation and Airport Management	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Training Course on Airport Master Planning and Development provides a **holistic understanding** of **airport master planning** and **sustainable development**, equipping participants with the essential **strategic planning** and **analytical skills** required to guide the future growth of modern airports. Explore the critical phases from **demand forecasting** and **capacity analysis** to **infrastructure design**, **environmental considerations**, and **financial viability**, ensuring airports evolve into efficient, resilient, and economically vibrant hubs.

In today's rapidly evolving **aviation industry**, effective airport master planning is paramount for navigating complex challenges and capitalizing on emerging opportunities. This course delves into **best practices** and **innovative solutions** for **airport expansion**, **operational optimization**, and **stakeholder engagement**, fostering a proactive approach to **long-term airport sustainability** and competitiveness in the **global air transport network**.

Programme Curriculum

Training Course on Airport Master Planning and Development

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Course Objectives

1. Master the methodologies for developing robust and adaptable airport master plans aligned with **aviation demand forecasting** and **industry trends**.
2. Analyze and optimize **airside**, **landside**, and **terminal capacity** to meet current and future passenger and cargo demands.
3. Integrate **environmental sustainability**, **green airport initiatives**, and **climate resilience** into planning processes.
4. Understand and apply **ICAO standards**, **national aviation regulations**, and **environmental compliance** frameworks.
5. Learn the principles of designing efficient runways, taxiways, aprons, and **next-generation terminal facilities**.
6. Develop **financial models**, **capital expenditure planning**, and explore **funding strategies** for airport projects.
7. Explore the impact of **smart airport technologies**, **automation**, and **data analytics** on master planning.
8. Master effective communication and collaboration strategies with airlines, government agencies, local communities, and other key stakeholders.
9. Identify and mitigate operational and developmental risks, enhancing **airport operational resilience** against disruptions.
10. Understand the implications of **eVTOLs** and **drone integration** for future airport layouts and operations.
11. Explore the strategic development of airport-centric commercial and logistics zones for economic growth.
12. Design and plan facilities that enhance **passenger flow**, comfort, and overall **airport customer experience**.
13. Adapt master plans to address shifts in travel patterns and operational requirements in the post-pandemic era.

Organizational Benefits

- Equip teams with the foresight and analytical tools for informed, long-term airport development decisions.
- Ensure efficient allocation of resources and maximize returns on infrastructure projects through sound planning.
- Streamline airport processes, reduce bottlenecks, and enhance overall performance and throughput.
- Minimize legal and environmental risks by adhering to international and national aviation standards.
- Identify and capitalize on opportunities for commercial development and non-aeronautical revenue streams.

- Develop resilient infrastructure and operational strategies to withstand unforeseen challenges and disruptions.
- Foster trust and collaboration with airlines, government bodies, and local communities through transparent planning.
- Position the airport as a leading, future-ready aviation hub, attracting investment and fostering growth.

Target Audience

1. Airport Management & Executives
2. Airport Planners & Engineers.
3. Civil Aviation Authority (CAA) Officials
4. Consultants & Project Managers
5. Airlines & Ground Handlers
6. Real Estate Developers & Investors
7. Environmental Managers.
8. Government Officials.

Course Outline

Module 1: Foundations of Airport Master Planning

- Understanding the purpose and scope of airport master plans.
- Key phases of the master planning process: data collection, forecasting, analysis, concept development, implementation.
- Roles and responsibilities of various stakeholders in master planning.
- Regulatory frameworks: ICAO Annexes, national regulations, and their impact.
- Introduction to sustainable airport development principles.
- **Case Study:** Review of the Amsterdam Airport Schiphol Master Plan and its emphasis on collaborative stakeholder engagement.

Module 2: Aviation Demand Forecasting & Market Analysis

- Methodologies for passenger and cargo traffic forecasting (short, medium, and long-term).
- Factors influencing aviation demand: economic growth, demographics, tourism, global events.
- Market segmentation and identifying key demand drivers.
- Data sources and analytical tools for robust forecasting.
- Scenario planning and sensitivity analysis for uncertain futures.
- **Case Study:** Analysis of how Dubai International Airport (DXB) adapted its master plan based on evolving long-term traffic projections and global market shifts.

Module 3: Airside Planning & Capacity Optimization

- Runway system configurations, design, and capacity assessment.
- Taxiway systems, apron design, and aircraft parking optimization.
- Air traffic management (ATM) considerations and integration with airport infrastructure.
- Airfield lighting, signage, and navigation aids.
- Noise abatement procedures and environmental considerations for airside operations.
- **Case Study:** Development of new parallel runways at Istanbul Airport to significantly increase airside capacity and reduce delays.

Module 4: Terminal Planning & Passenger Experience

- Terminal concepts: linear, pier, satellite, and their functional implications.
- Passenger flow analysis, level of service (LOS), and sizing requirements.
- Baggage handling systems, security checkpoints, and border control integration.
- Retail, F&B, and non-aeronautical revenue generation within terminals.
- Implementing smart technologies for enhanced passenger experience and operational efficiency.
- **Case Study:** Changi Airport Terminal 4's focus on automation and self-service technologies to optimize passenger flow and enhance experience.

Module 5: Landside Access & Ground Transportation

- Analysis of surface access modes: road, rail, public transport, and intermodal connectivity.
- Parking facilities planning and management strategies.
- Curbside management, pick-up/drop-off areas, and future mobility concepts.
- Integration with urban planning and regional transportation networks.
- Planning for future mobility solutions like Urban Air Mobility (UAM) and autonomous vehicles.
- **Case Study:** The integration of the Heathrow Express and Crossrail with Heathrow Airport's landside infrastructure to improve connectivity.

Module 6: Airport Economics & Financial Viability

- Cost-benefit analysis of airport development projects.
- Sources of airport revenue: aeronautical vs. non-aeronautical.
- Capital expenditure (CAPEX) and operational expenditure (OPEX) planning.
- Funding mechanisms: government grants, private financing, public-private partnerships (PPPs).
- Financial modeling and risk assessment for long-term sustainability.
- **Case Study:** Examination of the PPP model utilized for the development of the new terminal at LaGuardia Airport, New York.

Module 7: Environmental & Social Impact Assessment

- Environmental regulations and impact assessment processes for airport projects.
- Noise pollution management and mitigation strategies.
- Air quality management, carbon footprint reduction, and renewable energy integration.
- Biodiversity protection, water management, and waste management.
- Community engagement, social equity, and corporate social responsibility (CSR).
- **Case Study:** Zurich Airport's comprehensive environmental management system and its targets for carbon neutrality.

Module 8: Implementation, Monitoring & Future Trends

- Phased development strategies and master plan implementation roadmap.
- Performance monitoring, key performance indicators (KPIs), and adaptive management.
- Role of technology: BIM (Building Information Modeling), digital twins, AI in planning and operations.
- Emerging trends: aerotropolis development, modular airport design, spaceport integration.
- Developing a resilient and future-proof airport vision.
- **Case Study:** The ongoing development of the Delhi-Mumbai Industrial Corridor and its influence on airport expansion and regional economic development.

Training Methodology

This course employs a dynamic and interactive training methodology designed to foster practical skills and deep understanding. Methods include:

- **Expert-Led Lectures:** Engaging presentations by industry veterans and subject matter experts.
- **Interactive Workshops:** Hands-on exercises and group activities to apply theoretical concepts.
- **Case Study Analysis:** In-depth examination of real-world airport master planning projects, highlighting successes, challenges, and lessons learned.
- **Group Discussions:** Facilitated peer-to-peer learning and exchange of experiences.
- **Practical Simulations:** Utilizing planning tools and software (where applicable) for scenario-based learning.
- **Q&A Sessions:** Opportunities for direct interaction with instructors and clarification of concepts.
- **Networking Opportunities:** Facilitating connections with fellow professionals in the aviation industry.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org **or call** *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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